

FIG. 1**CUSTOM MOTOR OIL - SUPPLY OPTIONS**

CUSTOMER GIVES INPUT AT:	CUSTOMER PROVIDES INPUT BY USING:	CUSTOM OIL BLENDED AT:	CUSTOM OIL SHIPPED TO:	OIL CHANGED AT:
<ul style="list-style-type: none"> • HOME • KIOSK IN STORE • QUICK LUBE • PLACE OF WORK • MOBILE OIL CHANGE FACILITY • OTHER 	<ul style="list-style-type: none"> • COMPUTER TERMINAL • INTERNET • E-MAIL • TELEPHONE • FAX • ORDER FORM: • MAIL-IN • DIRECT • STANDING ORDER • OTHER 	<ul style="list-style-type: none"> • CENTRAL FACILITY • AT STORE • AT QUICK LUBE • LUBE • REGIONAL/ LOCAL FACILITY • MOBILE OIL CHANGE FACILITY • OTHER 	<ul style="list-style-type: none"> • HOME • STORE • QUICK LUBE • GARAGE/SERVICE STATION • GARAGE/SERVICE STATION • MOBILE OIL CHANGE FACILITY • OTHER 	<ul style="list-style-type: none"> • HOME • STORE • QUICK LUBE • GARAGE/SERVICE STATION • GARAGE/SERVICE STATION • MOBILE OIL CHANGE FACILITY • PLACE OF WORK • OTHER

ANY COMBINATION OF THESE COULD BE USED

FIG. 2

Questionnaire for Custom Motor Oil Selection – Vehicle/Driver Background Information

Name: 9 Address [include zip code]

10 Model Year of Vehicle [2000] 16

11 Engine miles [+100,000] 14 15

12 Type of vehicle: 16 15 14

Car [ALFA ROMEO] ▼▲

Light Truck [CHEVY PICKUP] ▼▲

Heavy Truck [MACK] ▼▲

Farm Equipment [John Deere] ▼▲

Construction Equipment [Caterpillar] ▼▲

SUV ▼▲

13 Car Maintenance Habits

Under-hood maintenance

Wash car

Clean/Shine tires

Vacuum interior

Clean upholstery

13 Significant Automotive Uses

Children carrier

Camping

Remote office

- next screen -

FIG. 3

Questionnaire for Custom Motor Oil Selection – Vehicle Driving/Use Requirements

17

Type of driving
(sliding scales)

City/highway _____ / _____
Distances (Winter?, Summer?) _____ / _____

In which vehicle will you use oil _____

How long do you store oil _____

During which season will oil be used _____

Other items available for oil change (**Go to Figure Supplement**)

Model year, etc.

Garage (yes) (no)

Maintenance regimen

Transmission fluid

Brake fluid and brakes

Typical oil drain interval (5000 miles) ▼▲

18

18

19

ENTER

FIG. 4

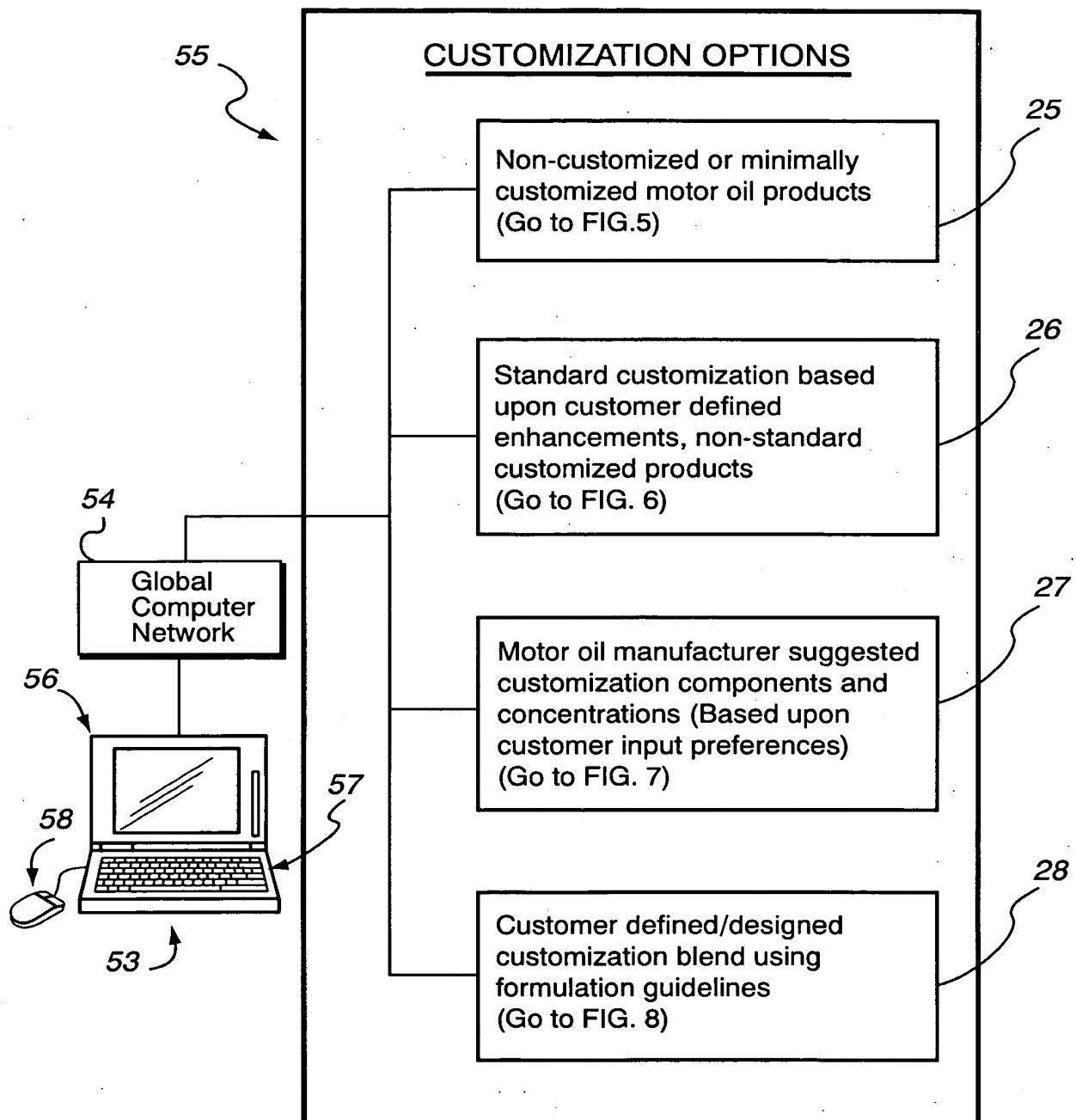


FIG. 5a

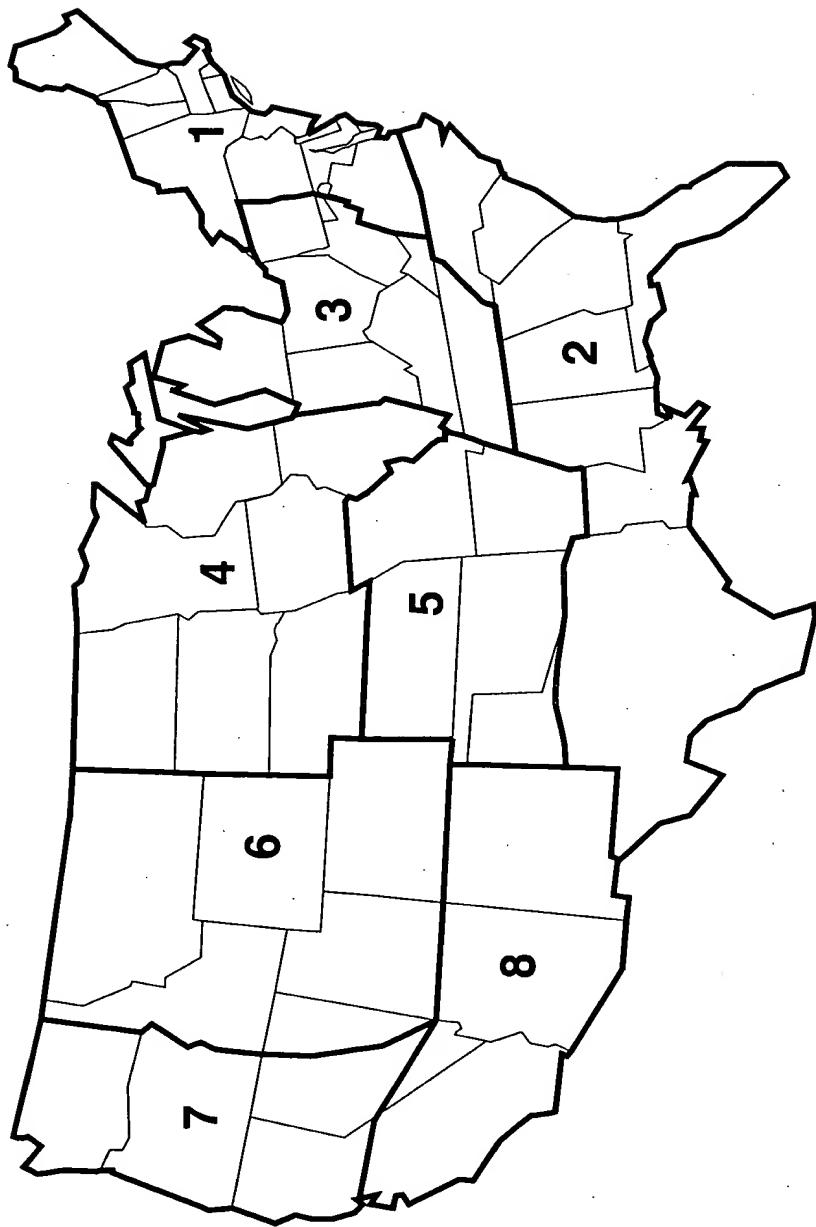


FIG. 5b

20

Tutorial entitled "Fundamentals for choosing motor oil for your engine." □

Choosing your motor oil

Customer choice

▼

▼

21

Motor oil manufacturer's recommendation (based upon region from which order originated), See below:

Your input data indicates your oil selection will be used in region XXX.

Is this correct? Yes No

If Yes, go to 23. If No, go to 22.

Refer to Region map, designate the region in which the oil will be used or for which region you wish the oil to be specified, Region ▼▲

Go to 23

Fill month ▼▲

23

Drain month ▼▲

22

Price range

▼

▼

Product type:

Base oil Synthetic

▼

Semi-synthetic

▼

Mineral

▼

Grade Mono-grade

Multi-grade

24

Product Strongly Recommended (choose one from list according to rank order of preference) ▼▲

Product Recommended (choose one from list according to rank order of preference) ▼▲

Product Not Recommended (do not choose one from this list) ▼▲

CONTINUE

RESET VALUES

FIG. 6

Based upon your responses to the lubricant profile questionnaire, you reside in Region 6 (from Figure 5a – upper mid-West) and the engine oil will be used starting October, for about 4 months. It is recommended that your engine oil be custom blended to provide:

Enhanced low temperature startability

52

Enhanced engine cleanliness

Moderately enhanced high temperature viscosity

Do you wish an oil with:

53

Enhanced low temperature startability

5 degrees F below conventional 10W-30

10 degrees F below conventional 10W-30 (Recommended level)

20 degrees F below conventional 10W-30

Enhanced engine cleanliness

10 percent greater than conventional 10W-30

30 percent greater than conventional 10W-30 (Recommended level)

50 percent greater than conventional 10W-30

Enhanced high temperature viscosity

0.5 higher than conventional 10W-30

1.0 cSt higher than conventional 10W-30 (Recommended level)

1.5 cSt higher than conventional 10W-30

2.0 cSt higher than conventional 10W-30 (Note your viscosity will exceed that for a 10W-30 grade and some credentials may not be retained -

Should we proceed?: Yes No)

56

Continue Yes No (if yes, select one):

Return to questionnaire: Yes

57

Return to menu: Yes

58

Return to choosing magnitude of the various options: Yes

Continue to [Figure 7] for customer selected options: Yes

59

60

Go to [Figure 12]

55

FIG. 7

Choose from among the suggested customization enhancements below.

Enhanced low temperature startability

- 5 degrees F below conventional 10W-30
- 10 degrees F below conventional 10W-30
- 20 degrees F below conventional 10W-30

Enhanced high temperature viscosity

- 0.5 cSt higher than conventional 10W-30
- 1.0 cSt higher than conventional 10W-30
- 1.5 cSt higher than conventional 10W-30
- 2.0 cSt higher than conventional 10W-30 (Note your viscosity will exceed that for a 10W-30 grade and some credentials may not be retained - Should we proceed?: Yes No)

Enhanced fuel economy

- 20% greater than minimum target level
- 30% greater than minimum target level (Recommended level)
- 40% greater than minimum target level
- 50% greater than minimum target level (Levels beyond this level not recommended).

Should we proceed?: Yes No

70% greater than minimum target level
100% greater than minimum target level

Enhanced engine cleanliness

- 20% greater than minimum target level
- 30% greater than minimum target level
- 40% greater than minimum target level
- 50% greater than minimum target level
- 100% greater than minimum target level

Extended drain capability

Increase beyond 5,000 mile drain interval: 5% to 200% ▲▼

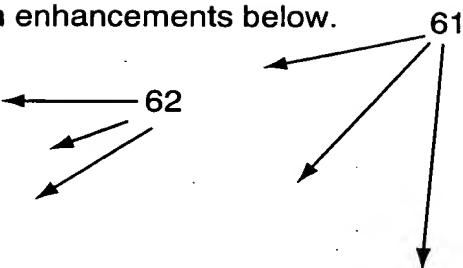


FIG. 7(Cont'd)

Wider product viscosity range

0W-30

0W-40

5W-40

5W-50

10W-50

10W-60

Other: _____

63

Enhanced wear protection

20% greater than minimum target level

30% greater than minimum target level

40% greater than minimum target level

50% greater than minimum target level

100% greater than minimum target level

Other Enhancements

63

Use of novel or non-conventional component:

You may choose to introduce new experimental products or non-conventional additives in your motor oil blend. If you wish to proceed, choose yes and proceed below.

Yes

64

Polytetrafluoro ethylene (PTFE)

Stabilized molybdenum disulfide

Stabilized vegetable oils

Special ester base stocks

65

Continue Yes No (if yes, select one):

Return to questionnaire: Yes

Return to menu: Yes

Return to choosing magnitude of the various options: Yes

66

Continue to next customization screen, [Figure 8] for customer defined component recommendations. Yes

FIG. 8

Enhanced engine cleanliness

67

For optimum response and results it may be necessary to adjust both detergent and dispersant components.

Detergent modification

Go to [Figures 9-11] (for performance/concentration data)

Change the detergent component level (Refer to appropriate additive response correlation Chart, Figures 9-11): -50% to 200% ▲▼

Add a second detergent component (Refer to appropriate additive response correlation Chart, Figures 9-11, Recommend using 30% more detergent component with high TBN (Total Base Number)): 0% to 200% ▲▼



Dispersant modification

Go to [Figures 9-11] (for performance/concentration data)

Change the dispersant component level (Refer to appropriate additive response correlation Chart, Figures 9-11) -50% to 200% ▲▼

Add additional high molecular weight dispersant (Refer to appropriate additive response correlation Chart): 0% to 200% ▲▼

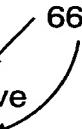
Enhanced fuel economy

67

Go to [Figures 9-11] (for performance/concentration data)

Change the Friction Modifier component level (Refer to appropriate additive response correlation Chart): 0% to 200% ▲▼

Add a second Friction Modifier component (Refer to appropriate additive response correlation Chart. Motor oil manufacturer recommends using 30% of Friction Modifier S, Note: using component which will darken the oil). 0% to 200% ▲▼



Enhanced low temperature startability

67

Enhanced high temperature viscosity

Extended drain capability

FIG. 8(Cont'd)

Wider product viscosity range

Enhanced wear protection

Enhanced control of oil oxidation

Use of novel or non-conventional component:

You may choose to introduce new experimental products or non-conventional additives in your motor oil blend. If you wish to proceed, choose yes and proceed below. Yes

Polytetrafluoroethylene (PTFE)

Stabilized molybdenum disulfide

Stabilized vegetable oils

Special ester base stocks

69

70

Continue Yes No (if yes, select one:)

Return to questionnaire: Yes

Return to menu: Yes

Return to choosing options: Yes

[Go to Figure 12]

FIG. 9

Boil-Off Improvement

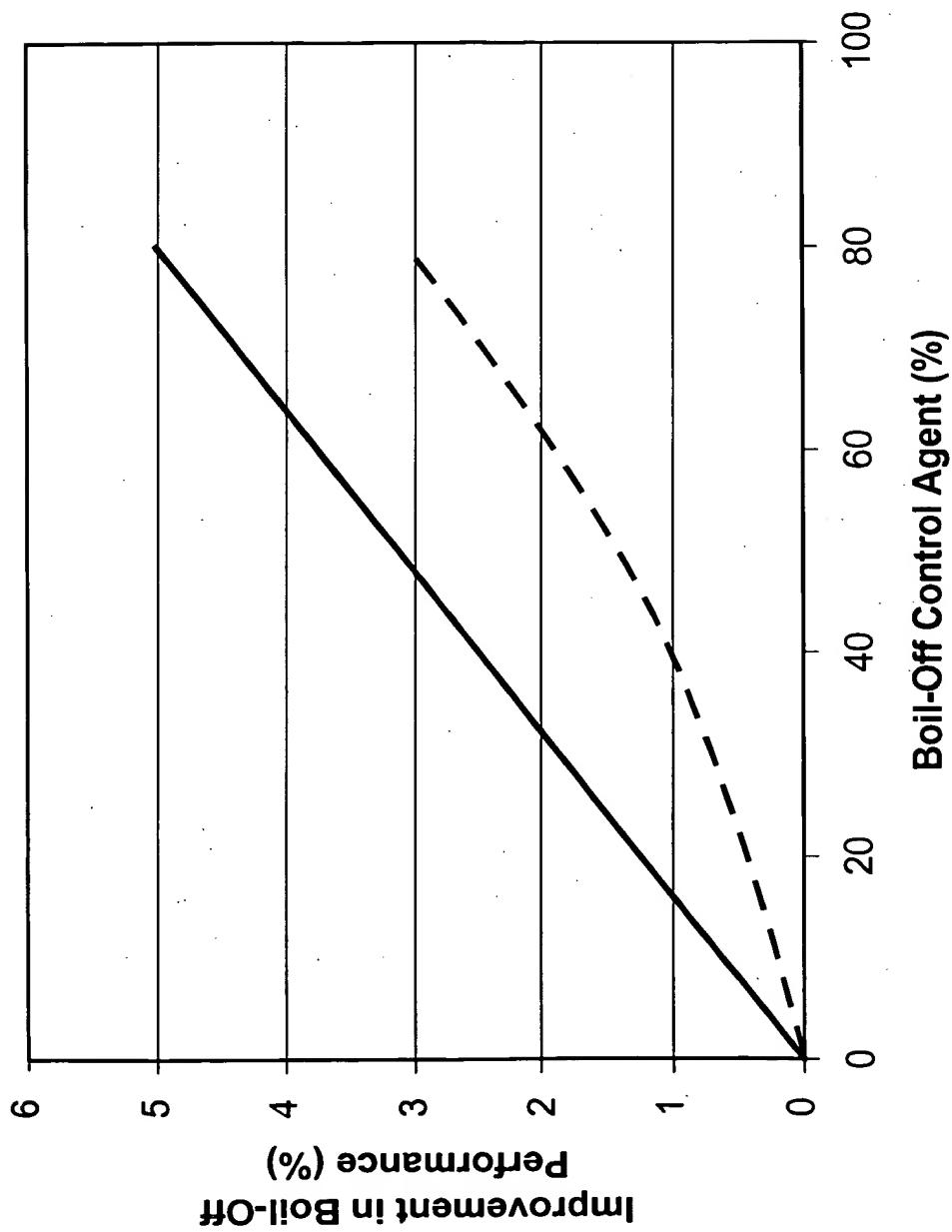


FIG. 10

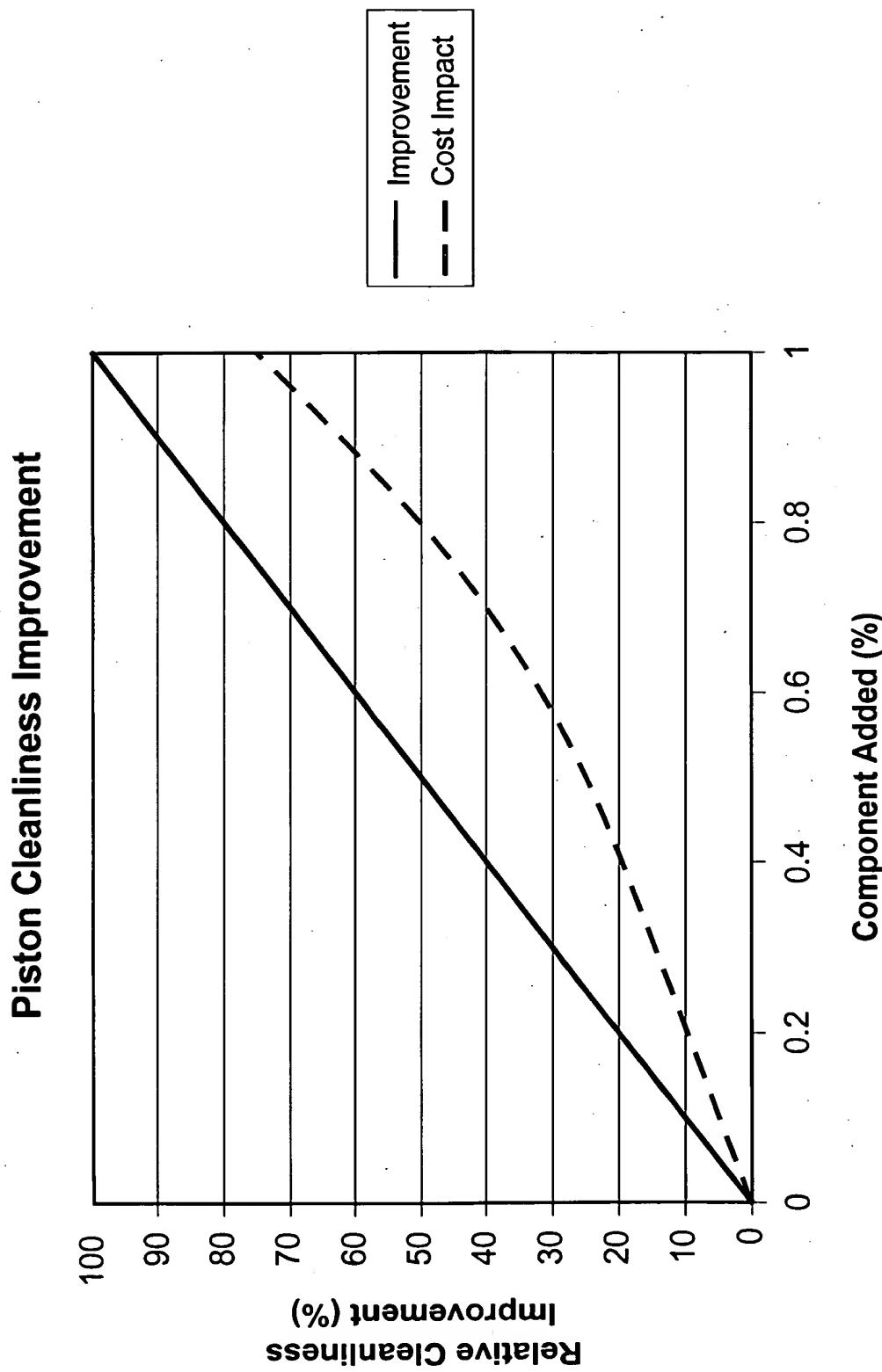
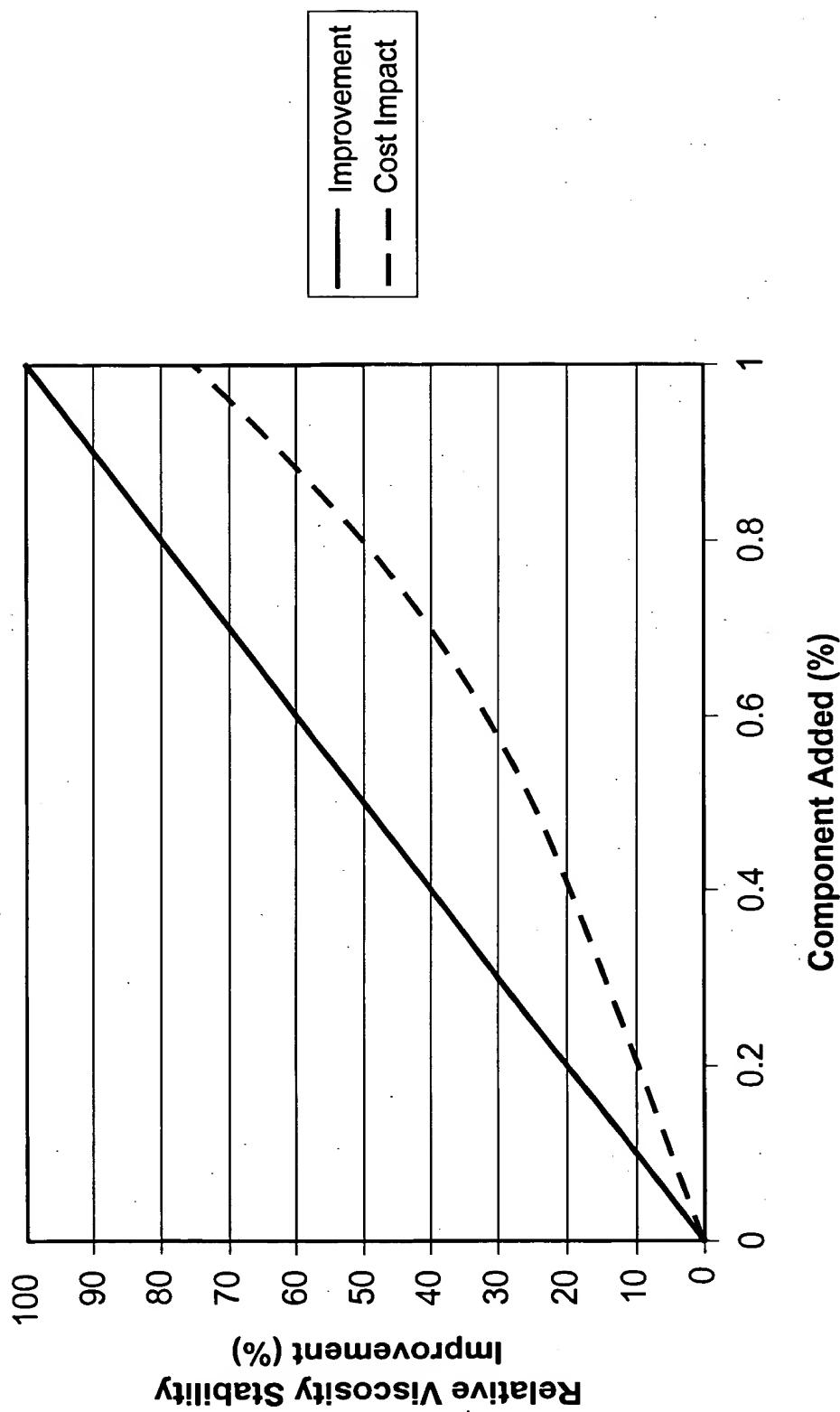


FIG. 11

Viscosity Stability Improvement



FINAL MOTOR OIL SELECTED

FIG. 12

Based upon the criteria you entered above, namely:

38 { Fuel Economy → 29
 Maximum without adversely affecting wear and cold weather properties → 30
 Cold Temperature Properties → 31
 Maximum without adversely affecting fuel economy and wear properties → 32
 Wear Properties → 33
 Maximum even if base motor oil changes - recommend one → 28

39 { We will design a motor oil with 10W-30 motor oil which has been up treated and formulated with 0.3% molybdenum dithiocarbamate fuel economy additive to increase fuel economy by up to 40%, 0.25% fumarate ester additive to improve the low temperature pumpability by about 10 degrees F and with 0.17% zinc dialkyldithiophosphate anti-wear additive to reduce wear by up to 50%. If this is acceptable, select the number of gallons below and click on ADD TO SHOPPING CART. If not acceptable click on RETURN TO THE MAIN MENU, or BACK.

40 { QUANTITY
 BACK → Δ

41 { ADD TO SHOPPING CART → BACK

42 { RETURN TO MAIN MENU → BACK

43

FIG. 13 SHOPPING CART/CHECK-OUT

Your shopping cart contains the following items:

#1: 10 gallons 10W30 motor oil which has been uptreated and formulated with 0.3% molybdenum dithiocarbamate fuel economy additive to increase fuel economy by up to 40%, 0.25% fumarate ester additive to improve the low temperature pumpability by about 10 degrees F and with 0.17% zinc dialkyldithiophosphate anti-wear additive to reduce wear by up to 50%.

PRICE: \$ XXX.XX

#2:

#3:

RETURN TO MAIN MENU TO DESIGN OTHER OILS

PROCEED TO FIGURE 16 FOR OTHER PRODUCTS/SERVICES

BACK

To check out, fill in the relevant information below, or your customer number, and click on SEND

Customer No.: _____

Name:

Type of payment: VISA Discover

Card No.

Expiration Date

Exact name on card:

Billing address on card

Shipping address for this order:

Name:

Company (if any):

Address:

City

State:

Zip:

Shipping type: Normal UPS (approximately \$Z/gallon)

Overnight courier (approximately \$ZZ/gallon)

Click here if you have entered a customer number and you want the product shipped to your default shipping address

SEND

[Thank you for your order. This product will be shipped by NORMAL UPS within TEN business days from today, and your DISCOVER card has been billed \$XXX.XX for the oil, and \$YY.YY for shipping, for a Total of \$CCC.CC]

FIG. 14

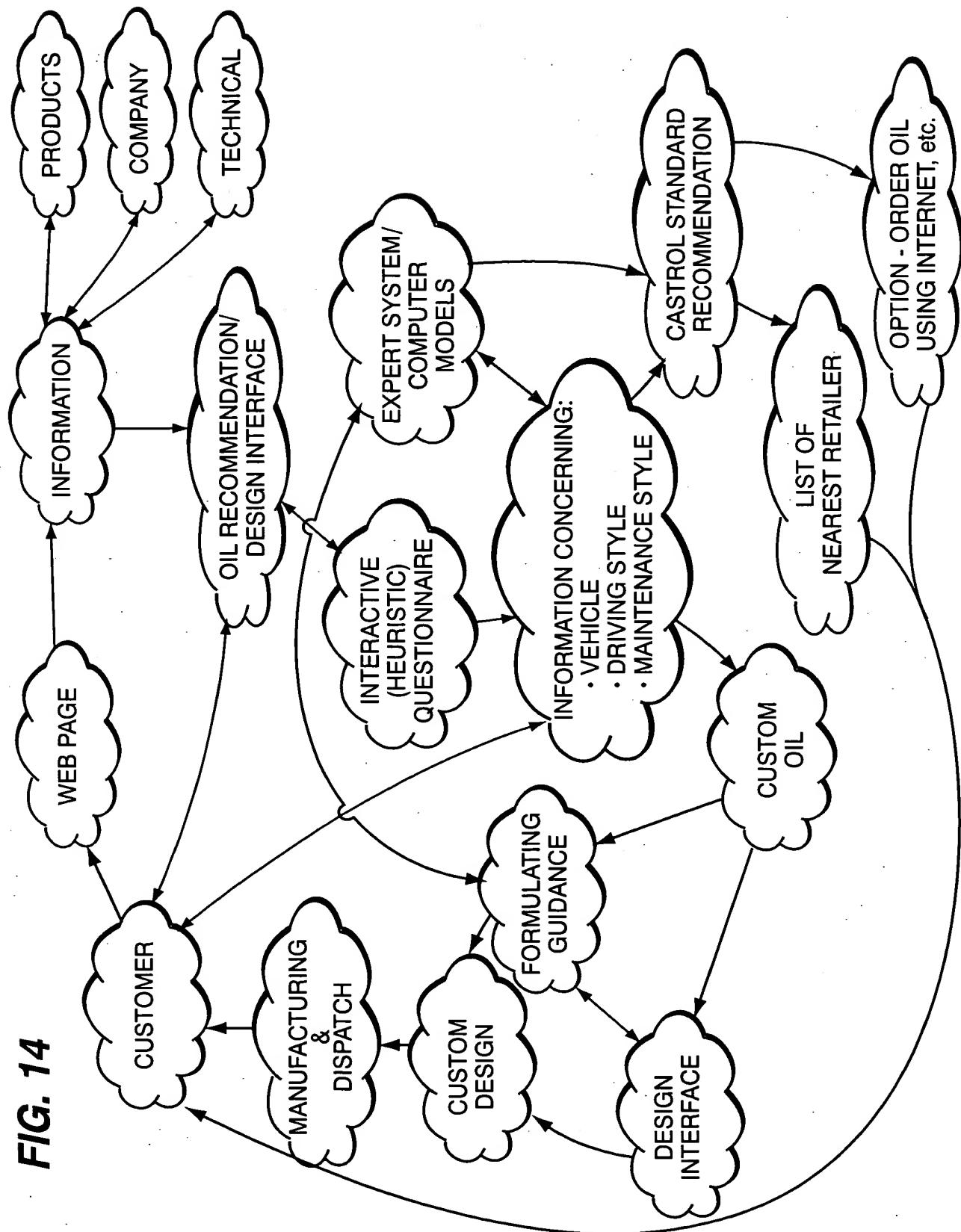


FIG. 15

EXAMPLE OF SIMPLIFIED MIXING SCHEME FOR CUSTOMIZED OIL

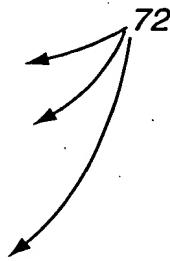
COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
% BASELINE MOTOR OIL	CUSTOMER DESIRES BASELINE PERFORMANCE	CUSTOMER DESIRES FUEL ECONOMY PERFORMANCE	CUSTOMER DESIRES ANTIWEAR PERFORMANCE	CUSTOMER DESIRES BOTH FUEL ECONOMY AND ANTIWEAR PERFORMANCE
100	80	80	80	60
% OF 5X MAX. BLEND CONC. OF FUEL ECONOMY ADDITIVE DISSOLVED IN BASELINE MOTOR OIL; BLEND A	0	20	0	20
% OF 5X MAX. BLEND CONC. OF ANTIWEAR ADDITIVE DISSOLVED IN BASELINE MOTOR OIL; BLEND B	0	0	20	20
TOTAL %	100	100	100	100

FIG. 16

Automotive Products To Enhance Driving Experience

Maintenance Items

- Filters
- Spark plugs
- Brake fluids
- Gear fluids
- Transmission fluid
- Grease
- Other



Car Care Products

- Car wash
- Wiper fluid
- Tire gloss
- Touch-up paint
- Other

Travel Service

- Weather advisory
- Travel Directions and Tips
- Maps
- Other

Merchandising

- Posters
- Apparel
- Designer products
- Other

Add to shopping cart

73

Return to main menu

74